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ANNUAL REPORT
OF THE
WIRE DEPARTMENT
FOR THE
YEAR 1910-11

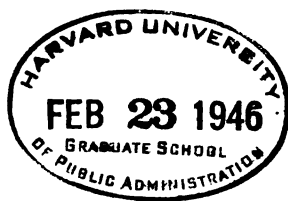
Compliments of

JAMES E. COLE,

Commissioner of Wires.

(Please exchange.)

CITY OF BOSTON
PRINTING DEPARTMENT
1911



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ANNUAL REPORT
OF THE
WIRE DEPARTMENT
FOR THE YEAR 1910-11.

OFFICE OF THE COMMISSIONER OF WIRES,
11 WAREHAM STREET, BOSTON, February 1, 1911.

HON. JOHN F. FITZGERALD,
Mayor of the City of Boston:

SIR,— I herewith submit report showing the appropriation and expenditures of the Wire Department and the work performed from February 1, 1910, to January 31, 1911, inclusive.

The underground district for 1911 has been prescribed as provided for in chapter 347 of the Acts of 1908, same being Dorchester avenue from Romsey street to the further side of Peabody square. This seems to have been the logical location to select as it is a continuation of last year's district, which was Dorchester avenue from Fort Point channel to Romsey street, and because the number and condition of the poles and wires on Dorchester avenue are such as to demand prompt attention.

In past years the complete clearing of the prescribed underground districts of poles and overhead wires has each year been delayed from one cause and another into the following year, but this year the hearty co-operation of the various interests makes it possible to report the 1910 district as cleared.

The losses during the year from fires found by the department to have been due to electrical causes have been unusually small, the total insurance losses from such fires being but \$3,936.99.

It is worthy of special mention, and it is a pleasure to report, that the American Telephone and Telegraph Company, whose long distance wires and poles for the support of same were exempt from the requirements of the underground acts, but whose representative agreed in consultation with the Commissioner in 1908 to have all their poles and overhead wires in the various prescribed underground districts in this city removed within three years, have fulfilled their word to the letter within the time agreed upon.

I feel it again necessary to call attention to the fact that the department's valuable records are not properly protected and that a fireproof vault should be provided.

Yours respectfully,

JAMES E. COLE,
Commissioner of Wires.

EXTERIOR DIVISION.

The prescribed underground district for 1910 comprised that portion of Dorchester avenue between Fort Point channel and Romsey street, a total distance of ten thousand six hundred forty (10,640) feet, which distance exceeded by eighty (80) feet the two miles as authorized under chapter 249, Acts of 1898.

Lines of poles stood on each side of the avenue the entire length, one hundred eighty-five (185) poles in all, owned by the following companies: Twenty (20) by the Edison Electric Illuminating Company, ninety-eight (98) by the American Telephone and Telegraph Company, and sixty-seven (67) by the New England Telephone and Telegraph Company, these figures not including the iron trolley poles of the Boston Elevated Railway Company, same being exempt.

Attached to these poles, and passing overhead on Dorchester avenue between Fort Point channel and Romsey street, there was approximately six hundred forty-eight thousand seven hundred seventy (648,770) feet of wire, or nearly one hundred twenty-three (123) miles, not including the trolley or span wire of the Boston Elevated Railway Company.

The above wires were owned by the following companies: Edison Electric Illuminating Company, American Telephone and Telegraph Company, New England Telephone and Telegraph Company, West End Street Railway Company, Fire Alarm Branch (Boston Fire Department), Police Signal Service (Boston Police Department) and the Mutual District Messenger Company.

In order to provide distribution facilities from the underground conduits along the route of the 1910 district, it has been necessary to grant, as provided for in chapter 347, Acts of 1908, fifteen (15) terminal pole locations. Of these, three (3) were for the Edison Electric Illuminating Company, and twelve (12) were for the New England Telephone and Telegraph Company and were located as follows: Those for the Edison Electric Illuminating Company on Alger street near

Dorchester avenue, Crescent avenue near Dorchester avenue and on Damrell street near Dorchester avenue; those for the New England Telephone and Telegraph Company were on Bellflower street, Dexter avenue, Damrell street, Edison green, Grafton street, Harbor View street, Howell street, Leeds street, Locust street, Romsey street, Sudan street and West Sixth street, all near Dorchester avenue, one pole each and underground connections from the conduits on Dorchester avenue to the poles. In addition to the above terminal pole locations along this year's district, three were granted in other parts of the underground districts, as follows: One on Myrtle street southerly from Revere street, city proper (iron pole for New England Telephone and Telegraph Company); one on Woodcliff street near Blue Hill avenue, the underground district for 1909, and one on Bray street near Washington street, Roxbury, in the underground district for 1904, both of these being for the New England Telephone and Telegraph Company.

A number of other petitions from the two companies above mentioned were considered, hearings being given in accordance with the law, and the petitioners then given leave to withdraw, it not being deemed necessary or advisable to grant the locations requested.

The large number of new telephone installations and the changing over of existing installations to the new systems has necessitated a greatly increased number of inspections, there being this year some twenty-five hundred more inspections on this class of work than during the year previous.

In the selection of new pole locations by the various companies, our engineers have accompanied the engineers of the companies interested, as has been the custom for a number of years, and sketches of the proposed locations are kept on file in this office in catalogue form for comparison with plans filed when request is made to the Board of Street Commissioners for locations desired.

Aside from the number of poles set on the public streets and avenues, as recorded in the table printed elsewhere, a large number of poles have been set in private unaccepted streets and in the rear of lots, which are inspected and a record made of same.

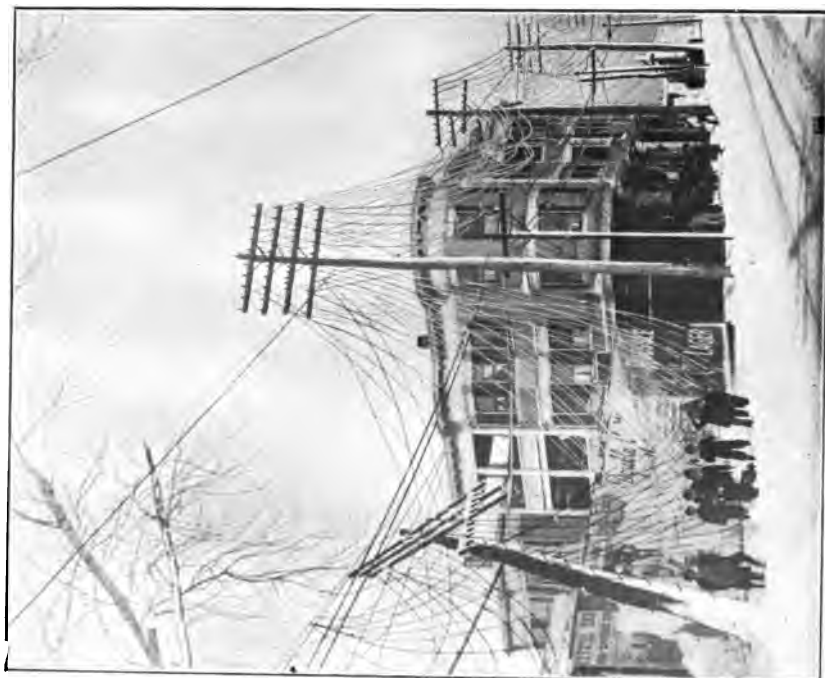


PLATE NO. 1.—DORCHESTER AVENUE AT RAWSON STREET,
WITH WIRES.

(Photograph taken after storm of 1908.)



PLATE NO. 2.—DORCHESTER AVENUE AT RAWSON STREET,
WITHOUT WIRES.

Accompanying this report will be found a plan showing poles and wires on and over that portion of the city which has been selected in accordance with the law as the underground district for 1911, namely, Dorchester avenue from Romsey street to Peabody square. Also photographs showing the condition of some of the streets already prescribed, both before and after overhead wires and poles supporting same were removed.

During the year the various companies doing underground work have opened one hundred thirty-five (135) different streets and avenues within the city limits for the purpose of constructing new conduits or extending or enlarging their existing conduits.

Fifty-six (56) of these were in the original underground district or the congested portion of the city lying north of Dover and Berkeley streets, while the remaining seventy-nine (79) were scattered throughout the rest of the city and suburbs.

The following table will show the overhead work for the year, from February 1, 1910, to January 31, 1911, inclusive:

Permits granted by the Board of Street Commissioners to set poles	82
Number of poles included in above orders	299
Permits granted by the Board of Street Commissioners to remove poles	72
Number of poles included in above orders	165
Number of streets or avenues included in above orders	127
Number of new poles set in new locations	323
Number of poles removed	334
Number of poles reset, straightened, renewed, etc.	1,305
Number of new pole locations selected	546
Number of poles now standing in public streets	14,762
Amount of dead wire removed by Wire Department (in feet)	266,860
Defect notices sent out	2,655
Number of defects included in these notices	7,278
Number of defects corrected	5,266
Notices of new work and special inspections	17,231
Amount of wire removed by owners (in feet)	3,694,010

The Board of Street Commissioners have also granted the following orders, which come under the jurisdic-

tion of this department inasmuch as they pertain in one way or another to the overhead or underground electric wires.

Police signal post locations	7
Fire alarm post and test box locations	11
Extensions of time on permits previously issued	8
Attachments of one company's wires to poles of another	42
To stretch overhead wires across public streets	7
To lay underground conduits in public streets	2
Extension of street railway tracks, etc.	51
Erection of derricks, stretching guy ropes, etc.	16
Transfer of poles from one company to another	6
Moving buildings, etc.	1
Total	<u>151</u>

The following companies and individuals have laid new conduits, extended present service or added to their underground cables during the past year:

For Electric Light and Power Purposes.

Boston Elevated Railway Company.
Charlestown Gas and Electric Company.
Edison Electric Illuminating Company.

For Telephone, Telegraph, Signaling and Other Purposes.

Boston Automatic Fire Alarm Company.
Boston District Messenger Company.
Boston Low Tension Wire Association.
Fire Alarm Branch (Boston Fire Department).
Homoeopathic Hospital.
Massachusetts Telephone and Telegraph Company.
Mixer Brothers Company.
New England Telephone and Telegraph Company.
New York Central and Hudson River Railroad.
Police Signal Service (Boston Police Department).
Postal Telegraph-Cable Company.
Schoolhouse Commission, City of Boston.
Telepost Company.

The electrical approvals of the department for permits for opening the streets for underground electrical work during the year numbered one thousand nine hundred seventy-five (1,975); two thousand two hundred seventy-three (2,273) reports have been made by the underground inspectors on this work, which necessitated over seven thousand four hundred ninety-five (7,495) inspections.

Character of Cables Used by the Various Companies.

COMPANY.	Kind of Insulation.	Sizes.
American Tel. and Tel. Co.	Paper.	108 and 144 conductor.
Boston Automatic Fire Alarm Co. .	Rubber.	25, 50, 75 conductor.
Boston District Messenger Co.	Rubber.	2 and 6 conductor.
Boston Elevated Railway Co.	Rubber.	500,000 to 2,000,000 C. M.
Charlestown Gas and Electric Co. .	Rubber.	No. 4.
Edison Electric Illuminating Co. .	Rubber and Paper. .	No. 8 to 1,000,000 C. M.
Fire Alarm Branch (B. F. D.) . . .	Rubber.	6, 10 and 19 conductor.
Mass. Tel. and Tel. Co.	Paper.	25 and 50 conductor.
New. Eng. Tel. and Tel. Co.	Paper.	15 pair to 600 pair.
Park Department (C. of B.)	Rubber.	No. 4.
Police Signal Service (B. P. D.) . .	Rubber.	7 conductor.
Postal Tel.-Cable Co.	Paper.	25, 26, 30, 60, 76 conductor.
The Mixer Brothers Co.	Paper.	60 conductor.
Telepost Company.	Paper.	10 conductor.

Table Showing the Underground Electric Service of Boston by Yearly Installation, 1894-1910.

YEAR. -	Feet of Conduit Installed.	Feet of Single Duct Installed.	Feet of Cable Installed.	Number of Manholes Installed.	Number of Services Installed.	Feet of Edison Three-wire Tube Installed.	Number of Distribution Boxes, E. E. I.
1894 *	213,160	1,762,401	1,342,731	1,322	3,286	273,473	381
1895	131,128	537,935	1,086,957	555	894	33,233	5
1896	146,759	711,081	1,088,012	585	1,108	37,165	11
1897	154,580	742,392	853,794	782	1,099	46,481	40
1898	112,254	835,180	1,202,914	556	947	13,463	6
1899	122,603	763,636	1,613,871	516	912	17,843	14
1900	145,163	816,968	784,488	582	1,035	34,136	24
1901	115,318	797,674	979,371	422	824	24,762	37
1902	87,396	529,383	784,032	327	1,000	28,496	42
1903	67,614	508,452	557,419	268	895	20,057	16
1904	46,539	365,162	486,474	176	642	13,080	12
1905	62,095	423,699	597,766	282	794	14,129	7
1906	84,465	627,428	534,675	366	976	14,959	9
1907	41,652	207,150	485,526	184	703	11,511	8
1908	41,374	258,815	417,228	220	747	7,045	8
1909	63,544	491,439	586,801	314	1,024	9,876	8
1910	84,033	416,076	758,601	347	1,061	10,508	18
Totals . . .	1,719,677	10,792,871	14,159,660	7,804	17,947	610,217	646

* Includes underground service prior to formation of the Wire Department in 1894.

Table Showing Underground Work for the Year 1910.

COMPANY.	Feet of Conduit.	Feet of Duct.	Feet of Cable.	Number of Manholes.	Number of Services.
American Tel. and Tel. Company*.....			30,775		
Boston Automatic Fire Alarm Company..			600		
Boston District Messenger Company.....			1,725		
Boston Elevated Railway Company.....	9,485	73,459	63,629	35	29
Boston Low Tension Wire Association....	431	2,040		3	4
Charlestown Gas and Electric Company...	75	75	56		2
Edison Electric Illuminating Company....	46,171	242,821	447,040	196	741
Fire Alarm Branch (B. F. D.).....	610	2,891	21,480	2	23
Homœopathic Hospital.....		77			1
Massachusetts Tel. and Tel. Company....			700		
Mixer Brothers Company.....			1,016		
New England Tel. and Tel. Company....	14,451	69,149	156,382	73	236
New York Central & Hudson River R.R..	175	700			1
Police Signal Service (B. P. D.).....		960	21,000		13
Postal Telegraph Cable Company.....	9,733	20,020	11,098	27	3
Schoolhouse Commission.....		912			6
Telepost Company.....	2,902	2,972	3,100	11	2
Totals.....	84,033	416,076	758,609	347	1,061

NOTE.—Main and feeder tube and the solid system distribution boxes of the Edison Electric Illuminating Company are not included in the above figures. There were 10,508 feet of tube laid during the year; of this, 2,227 feet is reckoned as conduits; 18 new distribution boxes were installed during the year.

* In ducts of the New England Telephone and Telegraph Company.



PLATES NOS. 3 AND 4.—DORCHESTER AVENUE FROM ABBOTT STREET,
WITH AND WITHOUT POLES AND WIRES.

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Table Showing Overhead Electrical Condition of Boston and Some of the Work Accomplished from 1894 to 1910, Inclusive.

YEAR.	Number of Poles in District.	Amount of Overhead Wire in Feet in the District, Approximate.	Number of Poles Set in City.	Number of Poles Standing in City.	Number of Defect Notices Sent Out.	Number of Defects in Notices.	Number of Defects Reported Corrected.	Number of Poles Removed.	Number of Fences Removed.	Amount of Wire Removed by Owners.	Amount of Wire Removed by Wire Department.	Total Amount of Wire Removed in Feet.
1894.....	333	5,174,550	.....	12,398	.....	4,674	.....	* 73	217	1,814,650	881,150	2,695,800
1895.....	94	9,916,860	.....	12,979	.....	15,889	.....	* 94	643	5,332,600	2,740,425	8,073,025
1896.....	182	13,719,670	.....	14,267	1,760	11,445	.....	* 138	325	5,500,481	1,995,350	7,545,831
1897.....	134	2,721,550	.....	15,000	1,940	7,596	.....	.....	774	7,993,712	1,663,650	9,637,362
1898.....	.....	.....	424	15,355	3,693	15,963	3,029	* 52	661	2,034,420	836,100	2,871,720
1899.....	No district this year.	.....	.....	3,279	9,800	1,924	* 40	825	.....	348,275	348,275	348,275
1900.....	129	500,000	1,116	.....	2,147	5,041	4,270	215	535	20,160	272,150	292,310
1901.....	54	157,200	1,148	14,019	4,409	11,215	9,576	332	375	1,168,293	276,690	1,444,983
1902.....	183	350,988	† 738	14,607	3,419	8,256	9,410	150	162	3,976,124	263,325	4,239,449
1903.....	136	196,895	639	14,999	2,576	6,688	7,704	247	138	1,720,468	264,370	1,984,838
1904.....	191	1,003,200	211	14,954	1,615	5,431	4,579	256	141	2,931,237	251,790	3,183,027
1905.....	175	273,000	158	14,968	1,456	3,986	3,355	144	60	1,818,859	268,915	2,087,774
1906.....	225	746,000	130	15,000	1,554	3,513	3,623	98	32	3,773,420	381,750	4,155,170
1907.....	123	297,000	38	14,793	1,693	3,887	4,052	245	7	4,442,947	281,860	4,724,807
1908.....	154	248,000	121	14,648	2,510	5,362	5,081	266	.....	3,523,457	308,452	3,831,909
1909.....	107	299,800	536	14,773	2,599	5,835	7,052	411	.....	1,943,119	296,357	2,239,476
1910.....	185	648,770	323	14,762	2,655	7,278	5,266	334	.....	3,694,010	266,860	3,960,870
Totals...	2,405	36,253,483	5,582	14,762	37,295	131,859	68,921	3,095	4,895	51,687,957	11,597,469	63,336,626

NOTE.—No official survey was made of the pole lines throughout the entire city until 1900-01; this accounts for the somewhat incomplete and possible inaccuracy of these records for the years previous to 1900.

* Inside the prescribed underground district for this year only; number in rest of city not recorded.

† A different figure appears in the annual report for this year (998 poles being reported set and 270 removed). This was due to the record of permits issued, rather than the returns of work actually done, having been used.

Table Showing the Amount and Distribution of Boston's Electrical Power January 31, 1908.

	Total Rated Horse Power of Boilers.	Total Rated Horse Power of Engines.	Capacity in Incandescent Lamps.	Capacity in Arc Lamps.	Number of Motors.	Horse Power of Motors.	Number of Stations.
Boston Elevated Railway Company.....	39,138	64,950	66,149	625	5,401	226,607	10
Edison Electric Illuminating Company.....	25,456	71,200	749,087	9,169	9,200	35,953	13
Charlestown Gas and Electric Light Company..	475	140	.....	.....	80	503	.....
Boston Consolidated Gas Company.....	1,500	3,100	96,170	604	121	486	1
Block Plant Electric Light Company.....	273	417	5,250	.....	3	16	1
Sudbury Building.....	202	230	656	.....	30	140	1
Steam and Power Company.....	267	295	4,000	400	60	294	2
Hecht Building Plant.....	300	200	2,400	240	32	234	1
Isolated plants*.....	64,859	44,471	223,000	3,869	1,472	11,428	301
Totals.....	132,470	185,003	1,146,712	14,907	16,399	275,661	330

* The capacity of generators for isolated plants in kilowatts, 22,251.

**Table Showing the Amount and Distribution of Boston's Electrical Power
January 31, 1909.**

	Total Rated Horse Power of Boilers.	Total Rated Horse Power of Engines.	Capacity in Incandescent Lamps.	Capacity in Arc Lamps.	Number of Motors.	Horse Power of Motors.	Number of Stations.
Boston Elevated Railway Company.....	41,244	74,950	73,703	685	6,439	271,204	10
Edison Electric Illuminating Company.....	32,642	87,200	824,478	8,813	9,859	38,626	13
Charlestown Gas and Electric Light Company.....	475	140	.....	.....	100	575	.....
Boston Consolidated Gas Company.....	1,625	3,200	101,227	604	132	570	1
Block Plant Electric Light Company.....	273	417	5,250	.....	3	16	1
Sudbury Building.....	202	230	688	.....	30	140	1
Steam and Power Company.....	267	295	4,000	400	68	301	2
Hecht Building Plant.....	300	200	2,400	240	32	234	1
Isolated plants*.....	69,734	49,768	237,909	3,866	1,688	14,986	319
Totals.....	146,762	236,400	1,249,655	14,608	18,351	326,652	348

* The capacity of generators for isolated plants in kilowatts, 25,702.

January 31, 1910.

	44,356	73,450	83,738	866	6,551	271,449	10
Boston Elevated Railway Company.....	44,356	73,450	83,738	866	6,551	271,449	10
Edison Electric Illuminating Company.....	32,642	99,600	921,381	8,645	11,118	43,683	13
Charlestown Gas and Electric Company.....	.....	.....	10,485	311	202	1,223	.....
Block Plant Electric Company.....	273	417	5,250	.....	3	16	1
Sudbury Building.....	202	230	650	.....	29	132	1
Steam and Power Company.....	267	295	4,000	400	63	313	2
Hecht Building Plant.....	300	200	2,400	240	32	234	1
Hanover Street Trust.....	200	385	2,000	8	26	71	1
Isolated plants*.....	69,606	48,927	234,790	3,521	1,634	14,642	322
Totals.....	147,846	223,504	1,264,694	13,991	19,658	331,763	351

* The capacity of generators for isolated plants in kilowatts, 25,370.

January 31, 1911.

	44,356	74,950	84,813	947	6,587	271,545	10
Boston Elevated Railway Company.....	44,356	74,950	84,813	947	6,587	271,545	10
Edison Electric Illuminating Company.....	32,624	99,200	996,738	8,885	12,154	52,147	16
Charlestown Gas and Electric Company.....	.....	.....	12,226	295	258	1,633	.....
Block Plant Electric Light Company.....	273	417	5,250	.....	3	16	1
Sudbury Building.....	202	230	578	.....	38	135	1
Steam and Power Company.....	267	295	4,000	400	65	325	2
Hecht Building Plant.....	300	200	2,400	240	32	234	1
Hanover Street Trust.....	480	225	2,000	10	37	169	1
Isolated plants*.....	72,013	50,672	236,828	3,550	1,730	15,984	344
Totals.....	150,515	226,189	1,344,833	14,327	20,904	342,188	376

* The capacity of generators for isolated plants in kilowatts, 26,297.

**Table Showing the Increase of Electrical Output from 1894 to January 31, 1910,
Inclusive.**

	1894.	1895.	1896.	1897.	1898.	1899.	1900.	1901.	1902.
Incandescent lights.....	219,653	285,155	324,271	357,838	424,443	499,906	660,882	739,779	782,711
Arc lights.....	6,598	7,915	8,172	9,584	13,094	12,796	12,830	14,055	13,365
Motors.....	4,036	4,682	(?)	6,447	7,070	7,779	9,037	9,480	11,632
H. P. of motors.....	(?)	(?)	(?)	48,641	84,002	90,890	102,562	145,565	164,625
		1903.	1904.	1905.	1906.	1907.	1908.	1909.	1910.
Incandescent lights.....		792,059	874,539	971,711	1,060,878	1,146,712	1,249,655	1,264,694	1,344,833
Arc lights.....		14,001	14,441	15,271	15,163	14,907	14,608	13,991	14,327
Motors.....		12,344	13,250	13,724	14,948	16,399	18,351	19,668	20,904
H. P. of motors.....		168,500	179,910	192,493	234,316	275,661	326,652	331,763	342,188

INTERIOR DIVISION.

During the year the Edison Electric Illuminating Company have put in commission two new substations, numbered 36 and 37. Station 36, which is an A. C. substation located corner of Commonwealth avenue and Linden street in the Brighton district, takes the load formerly supplied by the old generating station (No. 32) on Cambridge street, Brighton, which has been discontinued. Current is supplied to this new station from the L street station of the Edison Electric Illuminating Company at a potential of 13,200 volts and has a capacity in step-down transformers of 2,400 kilowatts for commercial lighting and power service, and 495 kilowatts in mercury arc rectifiers for street lighting service, making a total of 2,895 kilowatts capacity; 2,300 volts is used for the commercial circuits.

Substation 37 is located in the basement of the new Jordan Marsh Company building, Avon street. There is at present installed here a 1,000 kilowatt motor generator, transforming from 6,900 volts three-phase A. C. to 230 volts D. C. current.

The Boston Elevated Railway Company have added a third 1,000 kilowatt rotary converter at their Egleston square substation, corner of Washington and Bray streets, and they have at present in process of construction on O street, South Boston, a new A. C. central power station, which is to be built first for three 15,000 kilowatt turbo units, generating A. C. current at 13,200 volts, 25 cycles; later additions to be made as occasion requires. In connection with this station underground trunk line conduits will be run to various sections of the city and to the suburbs, the substations as now laid out being Egleston square, 5,000 kilowatts; Roslindale, 2,000 kilowatts; Coolidge's Corner, 4,000 kilowatts; Kendall square, 2,000 kilowatts; Arlington, 2,000 kilowatts; Malden, 4,000 kilowatts; and East Boston, 2,000 kilowatts.

The provisions of chapter 450 of the Acts of 1904 relating to the inspection of theaters and halls have been complied with, and inspections to the number of 2,121 have been made during the year.

We have had fewer cases of failure on the part of those installing wiring and apparatus designed for light, heat or power purposes to properly notify this department than usual, and with a few exceptions such cases as have come to our attention were evidently due to an oversight or to lack of knowledge as to the necessity of notifying the department of the intention to perform work, rather than to any intention to evade the law. This improved condition is largely due to the provisions of chapter 347 of the Acts of 1908, which provides a fine of from \$10 to \$50 for failure to notify, and to the fact that a number of convictions obtained under same has had a salutary effect on those who, under conditions existing previous to said law going into effect, would in many instances evade the requirements by failing to send proper notification of work performed by them.

There were eighteen fires which started inside of buildings which were found to have been due wholly or in part to electrical causes. Of this number, but seven entailed an insurance loss, and the total insurance loss was but \$3,413.99. There were also two electrical fires which started on the outside of buildings, one of which burned through to the inside of building. The combined insurance loss by these two fires was \$523, making a total insurance loss by fires found by this department to be due to electrical causes to be \$3,936.99. The most serious insurance loss was \$1,288.36, same resulting from a slight fire in so far as actual burning was concerned, due to an electric flatiron being left in circuit becoming overheated and igniting wooden table upon which it had been carelessly left. Fire was extinguished by sprinklers overhead and loss given above was almost entirely due to water damage. The most serious of the fires caused an insurance loss of \$1,177.87, and was the result of water leaking upon molding containing electric lighting wires, the insulation on wires breaking down, permitting current leakage to occur between wires of opposite polarity, in combination with the fact that after the fuses in cut-out had properly performed their duty, copper wire jumpers had been inserted in cut-out by parties presumably connected with the building. Of the balance of the fires causing insurance losses, one was due to carelessness on the part of a moving picture machine operator, loss being \$520; one was the result of a water leak flooding a ceiling fixture on the floor below, causing a short circuit, and, while the fire itself was insignificant, an insurance loss of \$184



(Taken day after windstorm while repairs were being made on poles and wires.)



PLATES NOS. 5 AND 6.—DORCHESTER AVENUE FROM DEXTER STREET,
WITH AND WITHOUT POLES AND WIRES.

was paid; one was due to a defective motor rheostat, loss \$145.86; one was due to improperly installed wiring, work being done by a moving picture machine operator without proper authorization, with a consequent loss of \$76.87, and one was due to the burning out of the armature of a motor, neighboring woodwork being ignited and a loss of \$21.03 resulting. Of the two fires that started on the outside of buildings, which resulted in insurance losses, one was due to a series arc lighting wire during a severe storm swinging into contact with building, arcing at points of contact, igniting woodwork and fire burning through to inside of building, causing insurance loss of \$425; while the other was the result of an iron awning frame and service wires being in contact just before wires entered building, an insurance loss of \$98 being paid for damage done.

During the year there were thirty-four accidents to persons, six of which resulted fatally. Eighteen of these accidents were to experienced men who were at work at the time on wires or electrical apparatus.

Of the fatal accidents, four were to employees of the Edison Electric Illuminating Company, who were at work on live wires on poles at the time; one was to an employee of the S. B. Condit & Co., and one to an employee of the Lundin Electric Company, both men at the time being at work in power stations, they being killed as results of their making accidental contacts with live metal on switch boards carrying current at extra high potential.

Of the sixteen accidents, none of which were fatal, to persons other than those at work on wires or electrical apparatus, nine were to mechanics in the employ of the Boston Elevated Railway Company, and employed at time of accidents on the elevated structure doing painting, carpenter work or track work; two were slight shocks received by two men at work on a new ventilator at a height of about 10 feet above roof, and who with their bare hands attempted to push some low potential wires out of their way; while the remaining five victims were a father and four children who were injured by contacts with a high potential wire which had burned off and fell to ground during a severe windstorm.

During the year there were 774 more notifications of new work than for the year previous, showing thereby a gain of a little less than 6 per cent. The number of inspections made showed an increase of 2,714 over last year, or a little more than 10 per cent, and the figures of

the number of arcs, incandescents, motors, etc., the installation and wiring of which was inspected, all show increases over records for last year.

The following is a complete summary of the work of the Interior Division for the year ending January 31, 1911:

Notices of new work received	13,986
Buildings in which wiring was completely examined	2,009
Incandescent lights examined	1,276,827
Arc lights examined	7,055
Motors examined	7,381
Total horse power of motors examined	31,375½
Services examined	842
Inspections made	29,949
Defects reported	1,416
Defects corrected	953
Other defects in process of correction	—

During the year there have been sixty-four fires or accidents to property, the origin of which was traced to electricity.

Fires in interior of buildings	18
Fires on outside of buildings	6
Fires at bridges	—
Fires on poles	8
Explosion in manholes	7
Miscellaneous, exterior	23
Miscellaneous, interior	2
	<u>64</u>

Table Showing the Number and Classification of Fires, etc., Due to Electrical Causes, from 1894 to 1910, Inclusive.

	1894.*	1895.	1896.	1897.	1898.	1899.	1900.	1901.	1902.	1903.	1904.	1905.	1906.	1907.	1908.	1909.	1910.
Fires on outside of buildings.....	4	7	14	11	22	6	5	8	3	2	5	4	1	....	2	2	6
Fires in the interior of buildings.....	27	27	22	29	28	31	29	22	18	32	23	20	14	18	23	32	18
Fires on poles.....	5	4	3	3	6	1	7	10	3	2	5	3	2	5	5	9	8
Bridge fires.....	....	6	2	1	4	2	3	1	1	3	3	4	4	7	1	4	....
Deaths.....	....	....	3	3	....	3	4	6	2	....	3	2	2	7	1	3	6
Injuries.....	11	17	13	16	11	16	4	21	13	9	15	17	12	13	14	25	28
Manhole explosions.....	1	3	2	5	....	5	1	5	5	1	3	3	2	4	....	4	7
Miscellaneous.....	12	27	26	45	22	7	20	33	12	12	40	25	36	38	35	43	25

* Record shown for 1894 is for five months only.

The following is a record of isolated plants in operation in this city.

Number of plants,	344.		
" boilers,	678,	total horse power,	72,013
" engines,	605,	" horse power,	50,672
" generators,	599,	" k. w. capacity,	26,297
" motors,	1,730,	" horse power,	15,984½
" incandescents,	236, 828.		
" arcs,	3,550.		

The record of new plants installed and inspected is as follows:

Number of plants,	25.		
" boilers,	30,	total horse power,	3,110
" engines,	26,	" horse power,	2,246
" generators,	29,	" k. w. capacity,	1,192½
" motors,	96,	" horse power,	1,362½
" incandescents,	6,013.		
" arcs,	36.		

During the year ending January 31, 1911, there were three old plants inspected, the equipment of which was as follows:

Number of plants,	3.		
" boilers,	9,	total horse power,	880
" engines,	7,	" horse power,	775
" generators,	7,	" k. w. capacity,	555
" motors,	80,	" horse power,	370½
" incandescents,	4,585.		
" arcs,	6.		

The record of plants, the operation of which was discontinued during the year, is as follows:

Number of plants,	3.		
" boilers,	8,	total horse power,	703
" engines,	7,	" horse power,	501
" generators,	7,	" k. w. capacity,	266½
" motors,	12,	" horse power,	20
" incandescents,	4,475.		
" arcs,	7.		

Table Showing Inspection of Interior Wiring of Buildings, etc., from 1894 to 1899, Inclusive.

	1894.	1895.	1896.	1897.	1898.	1899.
Notices of new work received.....	1,428	3,984	4,383	5,799	5,555	5,749
Number of buildings, wiring completely examined.....	173	359	395	473	451	567
Incandescent lights examined.....	69,035	123,136	118,679	128,857	125,458	151,046
Arc lights examined.....	1,083	2,934	2,835	2,396	2,396	2,495
Motors examined.....	272	776	908	1,121	1,027	1,225
Total horse power of motors examined..	840	83,566	3,247	3,739	5,681	6,967
Defects reported.....	610	4,890	9,505	2,318	1,661	2,369
Defects corrected.....	406	3,608	8,737	1,452	926	1,846
Services examined.....				1,988	1,283	1,116
Inspections made.....					9,472	12,473
Isolated plants in this city.....						205

Table Showing Inspection of Interior Wiring of Buildings, etc., from 1900 to 1905, Inclusive.

	1900.	1901.	1902.	1903.	1904.	1905.
Notices of new work received.....	5,859	9,107	10,272	8,590	7,983	9,317
Number of buildings, wiring completely examined.....	570	692	496	487	524	590
Incandescent lights examined.....	316,074	422,182	394,234	330,050	611,778	686,231
Arc lights examined.....	5,697	12,882	10,882	2,716	5,738	6,028
Motors examined.....	1,922	3,275	3,006	2,465	2,966	3,006
Total horse power of motors examined..	11,150	16,444	12,531	11,151	11,790	11,667
Defects reported.....	2,274	2,349	1,810	1,274	1,073	1,289
Defects corrected.....	1,622	1,928	1,165	938	673	905
Services examined.....	1,176	1,654	1,174	819	571	595
Inspections made.....	12,609	23,111	23,962	19,635	19,224	23,588
Isolated plants in this city.....	271	281	283	274	274	276
Isolated plants inspected.....		34	6	20	14	15

Table Showing Inspection of Interior Wiring of Buildings, etc., from 1906 to 1910, Inclusive.

	1906.	1907.	1908.	1909.	1910.
Notices of new work received.....	10,412	9,465	11,044	13,208	13,986
Number of buildings, wiring completely examined.....	1,173	1,158	1,475	1,735	2,009
Incandescent lights examined.....	716,137	966,615	1,123,626	1,154,150	1,276,827
Arc lights examined.....	4,469	5,909	6,059	6,087	7,055
Motors examined.....	4,619	5,477	5,997	6,568	7,381
Total horse power of motors examined...	21,725	23,347	20,197	21,477	31,375
Defects reported.....	1,425	1,945	1,776	1,526	1,416
Defects corrected.....	966	1,190	1,231	1,048	953
Services examined.....	780	773	675	847	842
Inspections made.....	27,286	28,265	24,624	27,235	29,949
Isolated plants in this city.....	298	301	319	322	344
Isolated plants inspected.....	90	79	41	22	28



PLATE NO. 7.—DORCHESTER AVENUE FROM NEAR D STREET,
WITH WIRES.



PLATE NO. 8.—DORCHESTER AVENUE FROM NEAR D STREET,
WITHOUT WIRES.

FIRES AND MISCELLANEOUS TROUBLES DUE TO ELECTRICITY, FEBRUARY 1, 1910, TO JANUARY 31, 1911.

February 9, opposite No. 83 Fort avenue; tree fire caused by wire of street arc lighting circuit being in contact with limb of tree, with resulting arcing and burning, wire finally burning off and dropping to street.

February 9, corner Richmond and North streets, about 11 a. m.; burn-out occurred in series street arc lighting circuit in manhole; no damage except to cables.

February 10, shortly after 7 p. m., Boylston street, opposite Head place; burn-out and slight explosion in manhole due to breakdown in insulation of the underground conductors of the Edison Electric Illuminating Company in manhole.

February 11, 5.40 a. m., Box 521, No. 159 Green street; during severe storm wire of series street arc lighting circuit swung in contact with building, current grounding through wet woodwork of building and metal work, piping, etc., building being ignited thereby; fire had burned through into building before extinguished; insurance loss, \$425.

February 22, Green street near Centre street; limb of tree breaking off during severe storm fell across wires of 2,300 volt A. C. circuit of the Edison Electric Illuminating Company, with resulting arcing and flashing at points of contact; limb of tree was dislodged from wires before serious trouble resulted.

February 22, 6.30 p. m., Box 274, corner Blue Hill avenue and Holborn street; during severe storm wire of street arc lighting circuit swung in contact with trolley wire and burned off; no damage except to wire in question.

February 22, about 6.29 p. m., Shawmut avenue and Ball street; during severe storm, wire of series street arc lighting circuit sagged and became crossed with telephone wire; damage slight; confined to wires mentioned.

February 28, in the neighborhood of 2 p. m., Bunker Hill car barns, Charlestown; during rainstorm, current grounded from trolley wire to building at point where trolley wire entered same; damage slight; fire department was called, but trouble was taken care of by one of the emergency crews of the Boston Elevated Railway Company.

March 1, 2.48 a. m., No. 68 Washington street, near

Union street, Charlestown; chemical and ladder carriage called on still alarm for fire in third story of building; attached to building was an iron bracket, and to insulator on same was attached an arc wire of the Charlestown Gas & Electric Company, during severe rainstorm, current grounded at insulator; building was ignited and fire burned through to inside of same.

March 18, 7.35 a. m., Box 67, No. 733 Washington street; armature and fields of an elevator motor burned out, otherwise no damage.

March 25, about 7.25 p. m., Eighth street and Dorchester avenue, South Boston; fire reported in manhole; same was burn-out in underground street arc lighting cable; no damage except to cable.

March 26, 8.40 p. m., Zeigler street station of the Edison Electric Illuminating Company; burn-out occurred in 500 kilowatt transformer; with the exception of loss of service caused by trouble, damage was confined to transformer in which burn-out occurred.

March 28, 2.55 a. m., junction of Tremont and West Springfield streets; fire in manhole, caused by burn-out in 250,000 C. M. underground main of the Edison Electric Illuminating Company; while trouble was in progress a slight explosion in manhole occurred, lifting manhole cover to a height of a foot or so above street.

April 2, 8.07 p. m., No. 146 Tremont street; resistance mounted in base of portable fan motor became overheated, causing considerable smoke and smell; no damage except to motor; two men of Engine 26 responded in answer to call of occupants.

April 2, at about 2.40 p. m., burn-out in underground electric feeders, followed by an explosion in manhole sufficient to throw manhole cover several feet in the air; no injuries to persons, and, beyond a broken pane of glass in nearby building, apparently no damage except to underground feeders and the loosening up of pavement about manhole; trouble occurred at junction of Franklin and Congress streets.

April 12, about 3.20 p. m., burn-out occurred in underground cables of the Boston Elevated Railway Company, in subway passing beneath Boston & Albany Railroad tracks in Allston; explosions occurred in two manholes of said company near scene of trouble. Trouble was due to workman at work drilling away concrete driving his drill into underground conduits, grounding current from cables thereby.

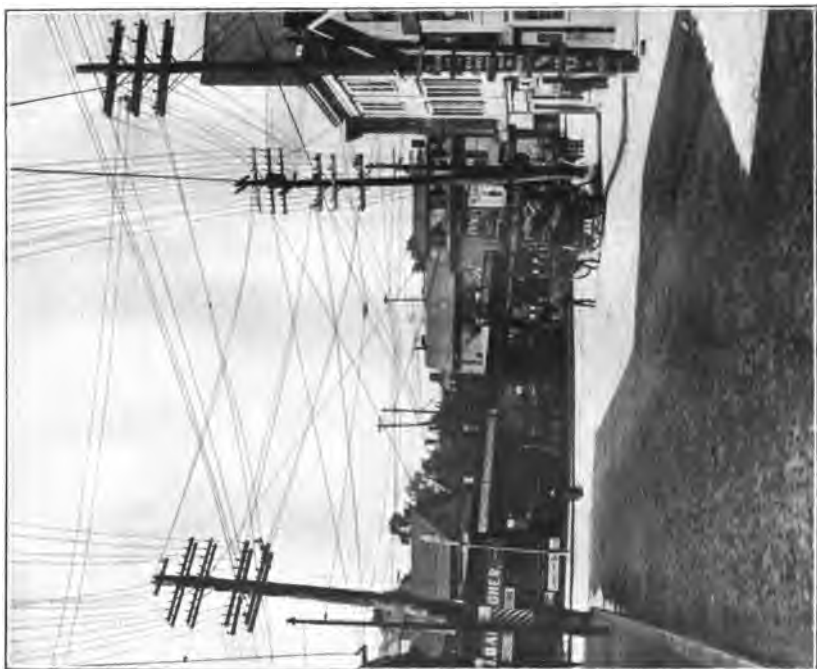


PLATE NO. 9.—ROXBURY STREET AND GUILD ROW, WITH WIRES.



PLATE NO. 10.—ROXBURY STREET AND GUILD ROW, WITHOUT WIRES.

April 19, 9.22 p. m., Box 247, junction of Huntington avenue and Francis street; fire at street arc lamp pole due to breakdown of insulation of conductor at point where conductor which runs up pole was connected to underground cable; no injury except to wires and slight damage to pole.

April 29, 8.30 p. m., slight fire on elevated structure between City square station and drawbridge, Charlestown; due to small piece of resistance grid which fell from passing train to one of the cross ties of structure; as piece of grid was hot, cross tie was ignited, but was extinguished by a chemical extinguisher taken from one of the elevated cars before any damage resulted.

May 4, 12.20 p. m., No. 112-119 Salem street; armature of one horse power motor used for operating sewing machines burned out; neighboring woodwork burned and scorched for a few inches; no other damage; members of Engine 8 called on still alarm; insurance loss, \$21.03.

May 5, 7 p. m., Box 52, No. 105 Summer street; starting rheostat used in connection with 10 horse power motor failed to operate properly; coils became overheated; insulation of wires connected to rheostat was ignited, as was also adjacent woodwork; damage insignificant except to rheostat and wires; insurance loss, \$145.86.

May 18, 1.45 p. m., corner Huntington avenue and Longwood avenue; during severe rainstorm breakdown occurred in insulation of high potential cables just above where they left terminal standpipe on pole; damage confined to the melting of lead and the burning of insulation on wires for a few inches.

June 4, 6.37 p. m., Box 24, fire in moving picture machine booth at the Grand Theater, No. 135 Cambridge street; caused by overheating of an improperly made joint setting fire to insulation on wire, fire being communicated to moving picture films; damage confined to machine, films, etc., in booth; insurance loss, \$76.87.

June 6, 8.03 a. m., Dover Street Station of the Boston Elevated structure; Ladder 3 called on still alarm on account of third rail insulator breaking down, with consequent severe arcing and flashing at point where breakdown occurred; services of the department not required.

June 11, 11.40 a. m., No. 116 Richmond street; short circuit between wires back of canopy of combination wall bracket melting hole in pipe and gas was ignited;

fire extinguished by occupants; no damage except to bracket and smoking up of wall for 2 or 3 feet.

June 14, 8.12 p. m., Box 17, Fire Department called to No. 39 Cross street, occupied as a restaurant; one of the proprietors attempted to remove a fuse from a plug cut-out; arcing occurred and in his alarm he gave an alarm from Box 17; no fire.

June 16, 8.30 p. m., Talbot avenue, just west of Norfolk street; breakdown occurred in insulation of arc circuit in arc lamp fixture on pole on southerly side of Talbot avenue; a telephone cable and ring wiring not permanently installed ran in close proximity to lamp fixture, cable and wiring having a wood sleeve or jacket over same where they passed fixture; current passed from fixture to cable and wires burning them off; fixture was blackened and lamp put out of commission for the night.

June 18, corner Massachusetts avenue and Harrison avenue; breakdown in insulation of street arc light circuit No. 477 occurred at point just above underground standpipe on pole and where connection was made with overhead wiring distributing from pole; insulation of wire burned off for several inches and lead of cable melted for a few inches, otherwise no damage; reported by Fire Department.

June 24, 5.45 a. m., Box 23, No. 24 Cambridge street; burn-out occurred in underground service wires entering basement of building; no damage except to service cable and wiring in the immediate vicinity of service cut-out.

July 4, at 10.06 p. m., Box 466, Beacham street, Charlestown; in stock room of the Boston Elevated Railway Company incandescent lamp was left in contact with wood partition, setting fire to same; damage slight.

July 4, at 10.55 p. m., Box 61; fire in manhole on Tremont street, at Hollis street, same containing wires and being the property of the Edison Electric Illuminating Company; burn-out followed by an explosion sufficient to lift cover off of manhole; flames issuing from manhole burned clothing somewhat and slightly burned Bernard E. Doherty, residing at No. 4 Pontiac street, who was passing by manhole at the time.

July 8, about 10 a. m., report received from Fire Department that a wire was burning tree on Centre street, opposite house of Engine 14; trouble was found to be due to one wire of primary alternating circuit No. 909 of the Edison Electric Illuminating

Company being in contact with tree; no damage except the slight burning of tree.

July 9, 6.12 p. m., Box 316, Grove Hall car barn of the Boston Elevated Railway Company; while electric car was being run back in car barn trolley wheel left wire and caught on an iron beam, trolley pole coming in contact with trolley wire at the same time; current passed from trolley wire to iron beam, thence to an inch pipe carrying signaling wires to ground; pipe burned off and wires contained in pipe also burned off; no other damage.

July 9, 8.08 p. m., Box 73, same given for fire in tree opposite No. 243 Shawmut avenue; due to arc wire of street lighting circuit being in contact with limb of tree; no damage except the burning of insulation of wire for two or three feet and the burning into limb of tree for several inches.

July 13, 8.40 p. m., tree fire opposite No. 28 Worcester street; same was due to wire of street arc light circuit being in contact with branches of tree; beyond the slight burning of branches of tree no damage done.

July 15, about 9 p. m., burn-out occurred in a 500,000 C. M. cable of the Boston Elevated Railway Company, just outside of their manhole at Harrison avenue and Massachusetts avenue, followed by a slight explosion in manhole of the same company located in Sheridan square.

July 27, about 5 a. m., corner of Commonwealth avenue and Pleasant street, Brighton; pole fire caused by pin breaking, permitting wire of 13,200 volt transmission circuit to drop on arm; pole was so badly damaged that it was necessary to replace same with a new pole.

July 29, about 11 p. m., No. 32 Hyde Park avenue; breakdown in insulation of secondary service wires of the Edison Electric Illuminating Company; same broke down where wires were in contact with iron frame of awning, near point of service wire entrance to building; awning set on fire and face of building burned and scorched for a space of about two by three feet; insurance loss, \$98.

August 1, 7.35 p. m., Box 15, No. 69-75 Fulton street; breakdown in insulation of cable entering basement from underground at point just inside of building; damage slight.

August 20, about 9 a. m., Edward Everett square,

Dorchester; members of Fire Department called on still alarm to electric light pole on account of burn-out in cable coming up from underground to feed same; no damage except to cable and slight damage to pole.

September 7, about 4.30 p. m., corner Minot street and Neponset avenue; wire of primary alternating circuit of the Edison Electric Illuminating Company swung in contact with iron trolley wire supporting pole of the Boston Elevated Railway Company, causing arcing and flashing at point of contact; no damage except the burning of insulation of wire for several inches.

September 18, 7.25 a. m., No. 1135 Washington street; slight fire due to water leak on floor above ceiling fixture, flooding fixture and causing a breakdown of insulation of wires in canopy; no damage except to fixture wire and slight burning of fixture block; insurance loss, \$184.

September 20, 6.30 a. m., No. 173 Summer street; burn-out of field coils of elevator motor, due to current being left on fields all night; members of Fire Department called on still alarm; no damage except to motor.

September 26, 6.30 p. m., No. 99 Bristol street; members of Fire Department called on account of burn-out of 100,000 C. M. underground service of the Edison Electric Illuminating Company entering the ruins of building at 99 Bristol street, which was one of the buildings destroyed by conflagration of August 10, for which a general alarm from Box 58 was sounded; breakdown in service undoubtedly due to injuries sustained as a result of fire referred to; no damage done except to cable.

September 26, 6 p. m., Dorchester avenue, near Beals street; tree fire caused by breaking of a tree bracket or insulator permitting wire of street arc lighting circuit to get in contact with tree; no damage except slight burning of tree and insulation of wire.

October 1, 11.06 p. m., Box 36, No. 85 State street; fire started in light shaft on third floor. Electric lighting mains run in light shaft were badly affected by leaky skylight. Cut-out intended to protect mains had been made valueless as a protective device by copper jumpers being installed across cut-out. When trouble occurred on mains as a result of their damaged condition, fire followed, cut-out before mentioned being inoperative as stated; insurance loss, \$1,177.87.



PLATE NO. 11.—FIRE CAUSED BY WIRE COMING IN CONTACT WITH CORNER OF BUILDING. (EXTERIOR VIEW.)

October 7, 7.26 a. m., Box 720, Nashua and Causeway streets, North Union Station; breakdown of insulation on motor mains, with consequent leakage of current to ground; insulation of wire ignited and burned for a few inches and adjacent woodwork charred; no other damage. Current supplied from plant of the Boston & Maine Railroad.

October 7, 6.08 p. m., Box 312, opposite 875 Albany street; boys had taken old clothes and stuffed same as a dummy, and after playing with same on the street went to roof of building No. 875 Albany street and threw dummy from same, it lodging across high potential arc wires of the Edison Electric Illuminating Company running on pole line on said street; later, a severe rainstorm occurred, dummy became saturated with water, and severe arcing occurred at points of contact with dummy and wires, dummy being set on fire thereby; no other damage resulted.

October 22, about 6 p. m., Centre street near Park street, West Roxbury; top of pole carrying electric light, telephone and other wires, also a tree opposite on side of street, badly burned as a result of wire of high potential street arc lighting circuit being in contact with a guy wire which ran from pole to tree referred to; no other damage.

November 3, Dorchester avenue, opposite junction of Seventh and B streets; pole fire as a result of insulator pin breaking, wire of high potential arc circuit coming in contact with cross arm and pole; cross arm badly burned and pole burned to a depth of about 4 inches.

November 4, 6.25 p. m., Box 16, corner of North and John streets; on outside wall of building No. 6 John street was located an iron bracket for series incandescent tungsten lamp for street lighting purposes; breakdown of insulation occurred in conductors at point on wall near bracket; no damage except to wires; storming at time.

November 4, Dorchester avenue, just south of Old Colony avenue; breaking of insulator pin permitted wire of street lighting arc circuit to come in contact with feeder of the Boston Elevated Railway Company, also in contact with pole, with consequent arcing and flashing; no damage except to wires and slight burning of pole; severe storm in progress.

November 5, 12.24 a. m., Chemical 3 called on a still alarm for a fire on pole opposite No. 28 Charles River

road, Charlestown; due to breakdown in insulation of street lighting arc circuit, just above standpipe, on pole in question; damage confined to cables and wires at point where trouble occurred and the slight burning of pole.

November 17, 9.30 p. m., Box 213, No. 5 George street; overheated rheostat for use in connection with $\frac{1}{2}$ horse power, 110 volt A. C. motor; proprietor states that his premises had been entered by unauthorized persons, who probably threw on motor switch, supposing that same controlled lights, starting box thereby being made alive, overheated and burned out; fire consisted merely of burning out of rheostat.

November 19, shortly after 9 p. m., Nos. 14-16 Tremont row, Theater Comique Hall; fire occurred in moving picture booth, probably caused by operators inadvertently permitting inflammable film to come in contact with lamp house of moving picture machine; other than the destruction of four moving pictures films very little damage done; Fire Department called on still alarm; insurance loss, \$520.

November 25, in the neighborhood of 1.19 p. m., Ladder 19 was called on still alarm to the corner of First and L streets on account of trouble with wires on side of pole; same consisted of breakdown of insulation, current grounding from primary alternating circuit to lead sheath of cables; no damage except to cables and slight burning on street side of pole.

November 30, shortly before 5 p. m., Dorchester avenue, near Rawson street; wire of street lighting arc circuit came in contact with top of gooseneck on arc lamp pole 2132, with consequent arcing and flashing and burning off of arc wire, the two ends falling to street; no other damage.

December 5, 6.19 a. m., Box 42, slight fire in subway at Park street, in temporary room used by subway contractors, same being due to defective rheostat which became overheated, insulation of wires leading into rheostat being ignited and woodwork in vicinity of rheostat being burned and scorched for a distance of several feet.

December 8, about 7.30 p. m., Columbia road near Mt. Vernon street; fire in street arc lamp pole, same apparently being due to collection of gas in bore of pole being ignited by lighted arc lamp on top of pole.

December 20, 2.40 p. m., Nos. 219-223 Tremont street; alarm from automatic Box 295-3; slight fire



PLATE NO. 12.—EFFECT OF FIRE CAUSED BY WIRE COMING IN CONTACT WITH CORNER OF BUILDING DURING RAINSTORM.
(INTERIOR VIEW.)

due to 32 candle power incandescent lamp being left in contact with an overcoat; no damage except to overcoat.

January 3, 11.20 p. m., slight fire on outside wall of building corner North and John streets; same being due to breakdown in insulation of wires of high potential series circuit at a point just above standpipe attached to building, wires running from same to series incandescent lamp used for street lighting purposes, attached to bracket on building; no damage except the burning of insulation of wire for a foot or so and interruption of lighting service.

January 7, 8.02 p. m., automatic alarm 286-5, No. 37 Wormwood street; fire was caused by $2\frac{1}{2}$ ampere electric flatiron being left with current on, iron becoming overheated and setting fire to wooden table upon which flatiron had been carelessly placed, heat, which caused automatic alarm to be given also, set off sprinkler, water from which quenched fire before the arrival of firemen; damage slight; insurance loss, \$1,288.36.

January 27, opposite No. 51 Marcella street, tree fire; tree insulator became broken or detached, permitting wire of primary alternating circuit to come in contact with limb of tree, with consequent arcing and burning at point of contact, damage confined to the burning off of small limb of tree and burning of insulation of wire for a few inches.

January 29, 5.30 a. m., corner Franklin and Federal streets; Chemical 1 called on still alarm on account of smoke issuing from manhole belonging to the Massachusetts Telephone and Telegraph Company; trouble was due to burn-out in 750,000 C. M. tie feeder of the Edison Electric Illuminating Company, burn-out occurring in same at point where one of the conduits, entering Massachusetts Telephone and Telegraph Company's manhole, ran close to feeder of the Edison Electric Illuminating Company; hole melted in telephone conduit; smoke and flames entered the tube and passed into telephone manhole; no damage except to duct of telephone company and feeder of the Edison Electric Illuminating Company.

January 30, about 9.55 a. m., corner Battery and Commercial streets; explosion occurred in manhole of the Edison Electric Illuminating Company, same following a burn-out in tie feeder between manhole where explosion occurred and junction box on the opposite

side of the street; damage confined to tie feeder and lifting of manhole cover and casting out of position, and the breaking of a few bricks on sidewalk where cover struck when it descended.

ACCIDENTS TO PERSONS DUE TO ELECTRICITY.

February 3, at about 9.45 a. m., Charles T. Taylor, an employee of the Edison Electric Illuminating Company, while working on a watt meter at the Scotia street station of the Edison Electric Illuminating Company, received slight burns to right hand and had his face scorched as a result of short circuit caused by copper connector, which he had in his hand, getting across both poles at meter.

April 4, Michael Glancy, a lineman in the employ of the Edison Electric Illuminating Company, while at work on pole located on Humboldt avenue, corner Brookledge street, made simultaneous contact with wire of a street arc lighting circuit and wire of primary A. C. circuit, receiving shocks thereby which caused his death.

April 5, G. T. Flanagan, an employee of the Boston Elevated Railway Company, while working on cable of said company on elevated structure near Beach street, received burns to the left wrist and the palm of left hand as a result of a short circuit caused by bare iron tie wire which he was using making simultaneous contact with third rail and grounded elevated structure.

May 12, in the neighborhood of 12.30 p. m., William Talbot, an employee of the Edison Electric Illuminating Company, while at work on high potential cable, issuing from standpipe on pole opposite No. 7 George street, Roxbury, received a severe shock of electricity causing him to fall unconscious to the ground; he was removed to the City Hospital where he died at 7.30 p. m. the following day.

May 13, about 9 a. m.; Merrill L. Gilman, a lineman in the employ of F. T. Ley & Co., while at work on pole No. 2389 W. D., opposite No. 18 Washington street, Grove Hall, received severe shocks of electricity, also burns to left foot and left hand. Gilman had a bit stock and bit in left hand and permitted bit to come in contact with high potential live wire, his left foot at the same time probably being in contact with iron terminal standpipe on pole.

May 17, about 10.30 a. m., William Crowley, a painter in the employ of the Boston Elevated Railway Company, was scraping one of the beams of elevated structure near the Battery Street Station preparatory to painting same. Along beam ran a conduit pipe which Crowley attempted to move to one side by the use of a pinch bar, which pinch bar he accidentally permitted to come in contact with third rail of system at the same time it was in contact with pipe and beam above referred to; as a result of short circuit thus caused, Crowley was severely burned about the face, hands and eyes.

May 23, 4.05 a. m., Thomas Davis, a lineman in the employ of the Boston Elevated Railway Company, and attached to their emergency wagon located at Bartlett street, Roxbury, was badly burned about the face and received burns to the hand as a result of short circuit caused by metal tool making simultaneous contact with trolley wire and metal sheathing of Tower "F," Roxbury, while Mr. Davis was attempting to take a metal protecting tube off of trolley wire near trolley wire frog at location referred to. He was removed to the City Hospital for treatment.

June 3, Henry C. Steaves, twenty-eight years of age, residing at No. 14 East Brookline street, while at work at station of the Edison Electric Illuminating Company, corner of Salem and Prince streets, came in contact with bus bar alive at a potential of 6,900 volts, and was killed.

June 10, William H. Barker and John A. Fraser, repairers in the Fire Alarm Department, while at work on fire-alarm box at Roger Clap School, Harvest street, received shocks and slight burns, wire of fire-alarm circuit being crossed with high potential wire on Allston street at the time.

June 13, at about 5 p. m., Dennis F. Courtney, a painter in the employ of the Boston Elevated Railway Company, while getting down from elevated structure to temporary platform beneath structure to put away tools for the night, made contact with his right hand with feeder cable, while his left hand at the time had hold of ironwork of elevated structure. He received a shock which caused him to fall to the street. Injuries consisted of broken thigh, bruises and burns on the palms and inside of fingers of both hands, burns being slight.

June 15, about 9.40 a. m., Daniel F. Kane, a lineman working for the F. T. Ley Company on the wires of the Edison Electric Illuminating Company, while at work on a 45-foot pole on Morton street, at Hunter street, Dorchester, attempted to push a 2,300 volt wire to one side, using his hand and trusting to the wooden pole for insulation from ground. Pole, which was evidently sappy or damp, acted as a conductor to ground, and when Kane attempted to lift wire with his right hand, he received severe shocks, also received slight burns on the middle finger of hand. Injuries not serious.

June 22, about 2 p. m., William T. Connolly, rooming at No. 21 Staniford street, city, an employee of the Edison Electric Illuminating Company as a patrolman, while on pole on Centre street, near corner of Church street, West Roxbury, came in contact with wires of a 4,000 primary circuit and wires of a 13,200 volt A. C. transmission circuit, receiving shocks and burns causing his death.

July 4, in the neighborhood of 2.45 p. m., Joseph C. Rettman and his four sons, Louis H. Rettman, 5 years, Henry C. Rettman, 7 years, Lawrence E. Rettman, 8 years, and William E. Rettman, 11 years, received shocks and burns from a wire of a primary alternating circuit of the Edison Electric Illuminating Company which had burned off and fallen to the ground on Amory avenue, opposite Amory terrace, Roxbury. With the exception of burns to Lawrence E. Rettman, which were very severe, injuries to victims were not serious. The burning off of wire was apparently due to the swinging together of two wires of primary circuit during severe high wind in progress at the time of accident.

July 21, about 4.15 p. m., Patrick McCristle, a lineman in the employ of the Edison Electric Illuminating Company, while at work on wires on a pole on Lamartine street, opposite Paul Gore street, made simultaneous contact with a high potential wire and grounded suspension wire of telephone cable, receiving shocks causing his death.

July 27, about 3.10 p. m., M. McDonough, an employee of the Boston Elevated Railway Company, while at work on elevated structure on Washington street, near Brookline street, received burns to his right hand and arm as the result of a short circuit caused by spike hammer which he was using making electrical



PLATE NO. 13.—INTERIOR VIEW OF NEW SUBSTATION OF THE EDISON ELECTRIC ILLUMINATING COMPANY,
COMMONWEALTH AVENUE AND LINDEN STREET.

connection with third rail and at the same time making connection with a claw bar which was in contact with running rail of system. Burns not serious.

August 24, William Carmilla received slight burns to fingers of left hand as a result of short circuit while at work in the battery room of third station of the Edison Electric Illuminating Company. Burns were not serious enough to prevent Carmilla continuing his work.

August 24, Alexander Bouchier, a lineman in the employ of the Boston Elevated Railway Company, while working on trolley trough, Charlestown Bridge, was burned about the hands and eyes as a result of short circuit caused by hammer which he was using making simultaneous contact with trolley wire and nail which he was driving, said nail coming in contact with grounded metal work of bridge.

August 31, during the forenoon, David Soley and John Phinney, employees of Richard Moore, roofer, No. 3 Province court, while at work on roof of building No. 329 Washington street, at the time installing a metal ventilating shaft rising about seven feet above roof, took hold of some low potential wires, about ten feet above roof, for the purpose of pushing them one side, receiving slight shocks but no injuries.

September 7, James Riley, a trackman in the employ of the Boston Elevated Railway Company, while working on elevated structure at Haverhill and Causeway streets, at 11 a. m., received slight burns to thumb and index finger of right hand as a result of short circuit caused by claw bar which he was using slipping and making simultaneous contact with third rail and grounded structure.

September 15, George Smith of No. 136 Grove street, and H. Jacobson of No. 132 Essex street, Chelsea, while working on elevated structure at junction of Causeway street and Charlestown Bridge were burned as a result of wrench which they were using making simultaneous contact with third rail and grounded metal work of structure. Mr. Smith was burned about the face and both hands, and Jacobson was burned on the right side of face and right forearm.

September 16, David Grew, a telephone lineman, while assisting in the removal of telephone pole on Chelsea street, near Scott's court, Charlestown, seated himself astride a span wire running to nearby trolley

pole for the purpose of making attachment to trolley pole to assist in lowering telephone pole to be removed. Grew was seated outside of trolley pole insulator, and span wire was alive, owing to defective insulator at trolley wire. Grew, making contact with grounded trolley pole, received shock which caused him to fall, but he was caught by other linemen before reaching the ground. Beyond a severe shaking up, Grew is said to have sustained no injury.

October 3, about 1.05 p. m., Patrick J. Kelly, a foreman in the employ of Ley Brothers, while at work on pole on Harvard avenue, near Commonwealth avenue, received a shock of electricity by coming in contact with two wires of 2,300 volt A. C. circuit of the Edison Electric Illuminating Company. Kelly received severe shocks and fell to the ground; in addition to burns on each arm, Kelly had injuries to head, face, arm and right hip.

November 15, shortly before 3 p. m., Constantine Proctor, an employee of the Lundin Electric Company, while at work in the eleventh station of the Edison Electric Illuminating Company, located in sub-basement of Houghton & Dutton's building, Tremont street, came in contact with live portion of so-called 6,900 volt circuit on switch board, with fatal results.

December 12, about 11.10 a. m., John Hurley, a carpenter, while employed on elevated structure near Thompson square, received burns to the face as a result of a short circuit caused by hammer which he was using at the time making simultaneous contact with third rail and grounded structure.

December 20, shortly after 12.30 p. m., H. F. Curran, residing at No. 13 Leyland street, Dorchester, and O. D. Moores, residing at No. 32 Maverick street, Chelsea, carpenters, working for the Boston Elevated Railway Company on elevated structure at Thompson square, Charlestown, received burns as a result of short circuit caused by chisel in the hands of one of the men making simultaneous contact between live third rail and grounded structure. Moores received burns of the first degree on the left side of the face, while Curran received burns of the second degree on the right hand and forearm.

January 25, 4.42 p. m., R. A. Keating, an employee of the Edison Electric Illuminating Company, while starting synchronous motor at L street station in the

presence of a crowd of students who were visiting station for educational purposes, was crowded or pushed by students, and, in saving himself from falling, threw out his hand, which came in contact with live portion of switch. He received severe shocks, also slight burns to the thumb and forefinger of left hand.

LIST OF WIRE DEPARTMENT EMPLOYEES
JANUARY 31, 1911.

No.	Occupation.	Salary per Annum.
1	Commissioner	\$5,000 00
2	Chief Inspectors	2,000 00
1	Chief Clerk	1,600 00
1	Engineer	1,600 00
1	Engineer	1,500 00
3	Inspectors	1,500 00
1	Clerk and Inspector	1,500 00
4	Inspectors	1,300 00
9	Inspectors	1,200 00
1	Clerk	1,200 00
1	Stenographer	1,200 00
6	Inspectors	1,100 00
2	Inspectors	1,000 00
1	Provisional Inspector	1,000 00
1	Stenciler	1,000 00
2	Drivers	1,000 00
1	Clerk and Deputy Inspector	800 00
1	Deputy Inspector	800 00
1	Telephone Operator	600 00
1	Office Boy	312 00
41		

STATEMENT OF DEPARTMENT APPROPRIATION
AND EXPENDITURES FROM FEBRUARY 1, 1910,
TO JANUARY 31, 1911, INCLUSIVE.

Appropriation	<u>\$57,850 00</u>
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EXPENDITURES.

Salary and wages:	
James E. Cole, Commissioner	\$4,986 28
Employees	<u>45,078 98</u>
Carried forward	\$50,065 26

<i>Brought forward</i>	\$50,065 26
Printing	1,823 70
Automobile	1,677 65
Horse	1,656 89
Travel	1,163 50
Telephone	530 55
Office	352 04
Stationery	171 13
Postage	109 50
Tools, etc.	87 08
Boston Fire & Police Notification Company	62 50
Advertising	41 90
	<hr/>
	\$57,741 70
Balance in treasury	108 30
	<hr/>
	<u>\$57,850 00</u>

LIST OF PROPERTY OF THE WIRE DEPARTMENT.

- 1 High potential testing apparatus.
- 1 Transformer.
- 1 Test board, capacity 220 volts, 300 amperes.
- 1 Auxiliary test board, capacity 220 volts, 150 amperes.
- 1 Reflecting galvanometer, condenser, telescope, scales, etc.
- 1 Set standard resistance coils.
- 1 Lamp stand and scale.
- 1 Shunt coil.
- 1 Set double connector posts.
- 1 Discharge key.
- 1 Reversing key.
- 1 Electrostatic Voltmeter, No. 70,647.
- 1 1,500-volt Direct Current Voltmeter, No. 3,438.
- 1 300-volt Weston Direct Current Voltmeter, No. 3,317.
- 1 300-volt Weston Direct Current Voltmeter, No. 6,020.
- 1 300-volt Weston Direct Current Voltmeter, No. 15,459.
- 1 300-volt Weston Direct Current Voltmeter, No. 15,455.
- 1 300-volt Weston Portable Direct Current Voltmeter, No. 15,456.
- 1 300-volt Weston Alternating and Direct Current Voltmeter, No. 1,044.
- 1 15-volt Weston Direct Current Voltmeter, No. 4,717.
- 1 500-amperes Weston Direct Current Ammeter, No. 2,428.
- 1 150-amperes Weston Direct Current Ammeter, No. 926.
- 1 50-ampere Weston Direct Current Ammeter, No. 2,381.
- 1 1,500-mil-ampere Weston Direct Current Mil-Ammeter, No. 2,433.
- 1 200-ampere T. & H. A. C. Ammeter, No. 29,421.

- 1 15-ampere T. & H. A. C. Ammeter, No. 21,507.
 - 1 15-ampere Weston Direct Current Ammeter, No. 8,426.
 - 1 Queen Testing Set, No. 389.
 - 1 Standard resistance coil with wheatstone bridge.
 - 1 Generator, 50,000 ohms.
 - 1 Bichloride of silver battery, 150 cells.
 - 4 Bichloride of silver batteries, each 60 cells.
 - 2 Horses.
 - 1 Automobile.
 - 2 Express wagons.
 - 2 Business wagons.
 - 4 Sets of harnesses.
 - 5 Robes.
 - 7 Blankets.
 - 2 Cameras (complete).
 - Miscellaneous tools used in connection with overhead construction.
 - Draughting instruments.
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DESCRIPTION OF PLATES.

Plate No. 1.— Is a view of Dorchester avenue at Rawson street (1910 district), showing poles and wires after the severe storm of December 25 and 26, 1909.

Plate No. 2.— Is a view taken from same point as No. 1 after all poles and wires had been removed.

Plate No. 3.— Is a view of Dorchester avenue, north from Abbott street (1910 district), showing the condition of the avenue before the poles and wires were removed. This photograph was taken during repairs on the wires after a severe windstorm.

Plate No. 4.— Is a view taken from the same point as No. 3 after all poles and wires had been removed.

Plate No. 5.— Is a view of Dorchester avenue from Dexter street, north (1910 district), showing the condition of the avenue before the poles and wires were removed. This photograph was also taken during repairs on wires after severe windstorm.

Plate No. 6.— Is a view taken from the same point as No. 5 after all poles and wires had been removed.

Plate No. 7.— Is a view of Dorchester avenue from a point near D street, looking north (1910 district), showing the condition of the avenue before the poles and wires were removed.

Plate No. 8.— Is a view taken from the same point as No. 7 after all poles and wires had been removed. The poles and wires on the left of the photograph are on the property of the New York, New Haven and Hartford Railroad.

Plate No. 9.— Is a view of Roxbury street at Guild row (1909 district) showing the condition of the streets before the poles and wires were removed.

Plate No. 10.— Is a view taken from the same point as No. 9 after all poles and wires had been removed.

Plate No. 11.— Is the exterior view of a frame house, taken the day after a fire, caused by arc wire grounding during heavy rain and igniting building.

Plate No. 12.— Is the interior view of room on upper floor of building shown in Plate No. 11, showing the damage resulting from said fire.

Plate No. 13.— Is the interior view of the Edison Electric Illuminating Company's new substation at Commonwealth avenue and Linden street.

